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09/914,037	11/05/2001	Dominique Plee	33808F157	8635

7590

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Smith Gambrell & Russell  
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EXAMINER

NGUYEN, TAM M

ART UNIT

PAPER NUMBER

1764

DATE MAILED: 07/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/914,037

Applicant(s)

PLEE ET AL.

Examiner

Tam M. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 1-7 and 14-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3,6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election with traverse of Group III, claims 8-13, in Paper No. 8 is acknowledged. The traversal is on the ground(s) that the restriction requirement is premature because claim 1 has not yet been formally rejection and thus, Applicants have not had the opportunity to address whether the claim would have been obvious over Rosback. This is not found persuasive because applicant has not shown the special technical feature linking the seven inventions, a zeolitic adsorbent, provide a contribution over the prior art, and single general inventive concept exists. Therefore, restriction is appropriate.

The requirement is still deemed proper and is therefore made FINAL.

The examiner suggests that applicants amend claim 8 to be an independent claim.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

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Claims 8-12 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3, 7-12 of U.S. Patent No. 6,410,815. Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims draw to a process for separating para-xylene from an aromatic mixture by using an adsorbent. The patented claims do not claim that the adsorbent has a Dubinin volume of greater than or equal to  $.240 \text{ cm}^3/\text{g}$ . However, the Dubinin volume is a parameter that describes the microporous volume. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of the patented claims by using an adsorbent having the Dubinin volume as claimed in the present application because increase in a microporous volume (e.g.,  $.25 \text{ cm}^3/\text{g}$ ) of the adsorbent would result in an increase adsorption capacity which in turn would improve adsorbent productivity.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 8-10, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rosback (3,960,774) in view of Neuzil et al. (3,558,732).

Rosback discloses a process for separating para-xylene from a mixture of C<sub>8</sub> aromatic hydrocarbons by contacting the mixture with an adsorbent comprising zeolite X with a silica/alumina is about 2.5 (Si/Al: 1.25). The adsorbed para-xylene is removed from the adsorbent by using a desorbent. It is noted that Rosback does not specifically disclose that the at least 90% of the exchangeable cationic sites of the zeolite are occupied by barium ions alone or barium and potassium ions wherein the exchangeable sites occupied by potassium to represent up to 1/3 of the exchangeable sites occupied by barium + potassium. However, Rosback discloses that the exchangeable cationic sites are **essentially completely exchanged** of the sodium cations with barium or barium and potassium in **a weight ratio of 1.5 to 200** wherein the terms "essentially completely exchanged" means less than 2% and preferably less than 1% by weight of sodium in the zeolite. Therefore, the examiner's position is that the limitation (at least 90% and occupied by 1/3) is inherent in the Rosback adsorbent. (See abstract; col. 2, line 42; col. 3, lines 28-36; col. 7, lines 10-44; col. 7, line 11 through col. 8, line 38; col. 9, lines 24-41)

Claim 8:

Rosback does not specifically disclose that the Dubinin volume (measure at the claimed conditions) is greater than or equal to 0.24 cm<sup>3</sup>/g. However, The Dubinin volume is a parameter that describes the microporous volume. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Rosback by using an adsorbent having the claimed Dubinin volume because increase in a

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microporous volume (e.g., .25 cm<sup>3</sup>/g) of the adsorbent would result in an increase adsorption capacity which in turn would improve adsorbent productivity.

Claims 8 and 12:

Rosback does not specifically disclose that the adsorption process occurs in the presence of a desorbent. However, Neuzil discloses an adsorption process of para-xylene wherein the adsorption step is operated in the presence of a desorbent (see Neuzil; col. 2, lines 47-57). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Rosback by operating the adsorption process in the presence of a desorbent as taught by Neuzil because it is effective to operate the adsorption process in the presence of a desorbent.

Claims 9 and 10:

The adsorption process is a simulated moving bed countercurrent operation. (See Rosback; col. 2, lines 42)

Claim 12:

The adsorption process is operated in the gas phase. (See Rosback; col. 3, lines 1-6)

Claim 13:

The desorbent is toluene. (See Rosback; col. 3, lines 45-48)

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rosback (3,960,774) and Neuzil et al. (3,558,732) further in view of Schmidt (4,642,406).

Both Rosback and Neuzil do not disclose that the process is operated in a simulated cocurrent fashion. However, Schmidt discloses that an adsorption process of para-xylene can be operated in either a simulated countercurrent mode or a simulated cocurrent mode (see Schmidt;

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col. 11, line 59 through col. 12, line 17). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Rosback/Neuzil by operating the process in a cocurrent mode because a simulated cocurrent mode have an equivalent function as a simulated countercurrent mode.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tam M. Nguyen whose telephone number is (703) 305-7715.

The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 703-308-6824. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-5408 for regular communications and (703) 305-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Tam M. Nguyen  
Examiner  
Art Unit 1764

TN  
June 24, 2003